

I. PURPOSE

A. The aim of this paper is to set forth the general factors involved in communications training as it pertains to active operations. These general factors include definitions, content, scope, time and personnel requirements. It is our desire that all staff personnel concerned with agent communications training be advised of the general problems and practices therein.

II. RECRUITMENT FACTORS

A. Other factors permitting, we in Communications consider an agent, or prospective agent, who is a trained radio operator as the best source of agent W/T trainee. As yet, there is no substitute for experience. The important "experience" in the recruitment of W/T operators is W/T operating of any sort. We are most interested in operating ability rather than technical ability. Allied specialized experience does, however, have some bearing in the recruitment of W/T agent operators. For example, telegraph operators, electricians, radio technicians, cipher clerks, past or present, fit in this category. Assuming a given individual is being considered for an agent W/T role but possesses no past W/T experience, we must apply certain assessment and aptitude tests in order to determine the advisability of training said individual in communications. Prospective trainees without communications background will form the largest category of students due to availability and security factors.

III. ASSESSMENT AND APTITUDE TESTS

A. The basic elements we are concerned with in assessing an individual for communications training are:

1. Code Aptitude - This is the primary test involved and the results attained on the standard ARQ-1 code aptitude test reflect whether or not the prospective trainee's aptitude is sufficiently high to warrant further consideration.
2. The individual's age - Generally speaking, the younger a raw trainee is, the more rapidly he can be taught.
3. Languages and degree of fluency - This is very important to us in overcoming language barriers and in determining the availability of special language instructors. Language is also important in the preparation of instructional material to meet the requirement.
4. Educational level - Present complexities of ciphers, plans, procedures, and equipment require a certain minimal intelligence and educational level as a requisite to successful training.
5. General experience and background - We are particularly interested in relating past experience to the communications training program. Does the trainee possess past experience in communications? Does he know anything of ciphers? Is he a musician? Does he have mechanical aptitudes?

B. The results of communications testing and assessment serve as a basis for recommending or not recommending an individual for communications training, and permit us to estimate the time period involved and the probable degree of competency which can be expected at the completion of training. The most important test is whether or not an individual has code aptitude. Unless an individual has been, or is a W/T operator, this aptitude test is required in every case.

IV. CLEARANCES REQUIRED

A. Planned and prospective operational programs requiring communications training should be discussed with a member of the Communications Staff in the field as soon as possible. This discussion will aid the Case Officer concerned in formulating plans and requests for Home Office approval and will alert the Communications Staff for scheduling purposes.

B. Local field clearance may be granted by the Area Communications Officer for basic training (i.e. not involving operational equipment, ciphers, plans, procedures, etc.) after assessment. No intermediate nor advanced training, however, may be undertaken without specific Home Office approval. This approval should be requested by the Case Officer concerned and must be coordinated with the Communications Division at the Home Office.

C. It should be further noted that any operation involving codes or ciphers must be cleared with Communications Security at the Home Office.

V. TIME REQUIRED IN TRAINING

A. Assuming that a trainee possesses average aptitude, intelligence, interest, emotional balance and health, we require a minimum of three months intensive and continuous (3 hours daily, 5 consecutive days per week) communications training to prepare that trainee for an active operational W/T role. If training is non-intensive but reasonably consistent, six months time should be planned for communications training.

B. Should a given trainee possess prior W/T operating experience, we still strongly urge that three months intensive training be planned since, at the completion of the program, the trainee will be good--not simply passable.

C. It is extremely difficult to set forth time requirements in the case of non-intensive communications training. The overall time period is obviously much longer than under intensive training. The variables, however, are so numerous that we prefer to treat such cases on an individual basis.

VI. INSTRUCTOR CONSIDERATIONS

A. The Communications Training Staff instructors are generally committed on a full-time basis at any given time. We must, therefore, fit each new trainee into the overall schedule. Specific notice, will in advance, of a training requirement should be given the Communications Section.

B. Non-English speaking trainees present a language problem of considerable import due to the scarcity of foreign language communications instructors. The problem may be met in the following ways:

1. Assign a staff instructor possessing fluency in the foreign language of the trainee to the case when possible.

2. Make use of a foreign translator available on a full-training time basis. Preferably this translator already communications trained or to be communications trained with the trainee. This method is often adaptable when foreign group interests are involved.

3. Make use of the translation ability of a staff case officer on a regularly scheduled basis.

4. Failing all else, instruct by sign language, demonstration, etc., aided, perhaps, by written material previously translated into the language concerned.

C. The most efficient training system from a staff point of view is that which permits several trainees to meet with two or more instructors at a central point. Each individual trainee or trainee group is restricted to a secure room in order to prevent contact between trainees. In this way reasonably constant instructions to a number of trainees can be accomplished with a minimal instruction staff. This is true regardless of the particular stage of training being undertaken by any individual trainee. Also note that greater instructional efficiency results since instructors are shifted, thus breaking the monotony of a single full-time teacher.

D. When training must be on a decentralized basis, intensive communications training requires the constant and 8-hour daily duties of one instructor per trainee, or group of trainees, for a minimum of three months. Thus, the instructor may live in the house where the trainee lives and learns, may commute from nearby quarters to the training house, or may have the trainee report to an individual instructional area. This individual system is obviously less economical from an instructor-time standpoint than the proceeding centralized and multiple trainee system.

E. While departures, in varying degrees, are possible from the above systems, any departure implies a longer time period being required to communications train agent W/T operators.

F. The most effective instructor time-saving method is to rely upon supervised self-teaching. This method is particularly applicable during basic and intermediate communications training. Under this method, the instructor lays out a self-teaching program, briefs the trainee on its use, and checks the trainee's progress periodically. In basic training, this method may be used with much success without an undue instructor time commitment. A simple code teaching device, such as the instructograph

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(a non-classified and well known piece of equipment the size of a woman's vanity box) effectively relieves the instructor of the full-time instructional requirement. During intermediate, advanced and continuing training additional equipment may be utilized, dependent upon individual security and cover considerations, for self training.

G. Any self-teaching method must, however, be augmented by intensive training of limited duration before it is truly effective.

VII. STAGES OF COMMUNICATIONS TRAINING

A. Basic Communications Training

1. Memorization and learning of the international morse code.
2. Attaining a code speed, through practice of receiving and sending code, of approximately 10-12 words per minute.
3. Basic international radio procedure (e.g. the call-up, fundamental "Q" signals, their meaning and use).
4. General principles of receiver tuning and the basic interrelationship of time-frequency-power.

B. Intermediate Communications Training

1. Continuation of basic communications training.
2. Continuation and amplification of the principles of radio procedure.
3. Actual on-the-air or simulated on-the-air receiving and two-way contacts.
4. The principle of signal plans (i.e. time-frequency-identification)
5. Equipment familiarization: In the case of agent operators, familiarization to be on any representative type of agent radio equipment. Such training to include operator maintenance.
6. Power and power sources: A.C. mains, wet and dry cell batteries and manual power (e.g. hand generator) as applicable.
7. Antenna principles and practices.

C. Advanced Communications Training

1. Continuation of intermediate communications training.
2. Training on final type signal plans and radio procedure.
3. Training in final type cipher and/or code systems.
4. Upon the attainment of an on-the-air code speed of 16 wpm, the agent operator will be radio fingerprinted.
5. Complete briefing to include operator maintenance in the specific type of agent radio equipment to be used on the operation.
6. The introduction of simulated or actual malfunctions in equipment, operating principles, traffic handling, etc.

Upon the completion of advanced training, an agent radio operator trainee will be completely trained to perform his operational role.

D. Communications Operational Briefing

1. The delivery of operational ciphers, signal plans, crystals and, in most cases, equipment immediately prior to operational activation.
2. Specific operational instructions to be given at this time. Each item of material will be checked by the briefing officer, preferably in the presence of the agent, prior to issue in order to insure the completeness of the issue.

E. Continuing, Joint, and Refresher Training

1. If, after a trainee has completed advanced communications training, he is not to be activated operationally for a period of time, it is highly advisable to continue his communications training. This "continuing" training does not necessarily introduce new subject matter, but rather is gauged to retain the ability level in communications previously attained. The most effective manner in which this level can be held is to have the trainee continue to operate an on-the-air signal plan with the training base.

2. "Continuing" training may well be incorporated into a combined training program which follows intensive communications training. For example, physical conditioning, map reading, parachuting, etc., may incorporate field problems during which on-the-air contacts may become an integral part. It should appreciate having two hours of communications training daily during this stage of an operation. In addition to on-the-air contacts, code copying from the base blind broadcast is a useful training aid.

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3. In those cases when a W/T agent operator has completed communications training, but is not available for continuing training, it is advisable to render periodic refresher training on an intensive short-term basis. Rapidly taught individuals lose their ability far more readily than a slowly trained and long experienced individual. The frequency of refresher training is, in general, individually determined. Well trained W/T operators who do not practice communications in their daily lives require one refresher period annually. Other W/T agent trainees require periods of from one period monthly to two periods annually. The time period in question will vary from two to ten days, depending upon individual circumstances.

VIII. TRAINING SCHEDULES

A. It is not possible to outline a training schedule for use under each of the many training situations we are confronted with at this time. We can, however, reflect a distribution of time and content by means of the representative daily outlines used during intensive communications training.

B. Daily training schedule--basic communications training:

0830-0920	Code Receiving
0930-1020	Lecture/demonstration on code reception, printing methods, procedure, prosigns, international signals etc. (One subject per period)
1030-1120	Code Receiving
1130-1220	Code Sending
1230-1330	Lunch
1330-1420	Code Copying
1430-1520	Code Sending
1530-1620	Equipment familiarization, principles of receivers, tuning, etc.
1630-1730	Code Copying

C. Daily training schedule - intermediate communications training

0830-0920	Code Receiving
0930-1020	Table nets - reduced distance circuits - on-the-air operation
1030-1120	Equipment familiarization
1130-1220	Cipher instruction (primary system)
1230-1330	Lunch
1330-1420	Signal plan fundamentals, radio procedure, prosigns, operating signals.
1430-1520	Copying blind broadcast
1530-1620	Code sending and copying
1630-1730	Cipher instruction - antenna and field expedient instruction-elementary theory as it pertains to practice.

D. Daily training schedule - advanced communications training

0830-0920	Code Copying
0930-1020	On-the-air operation with signal plan and ciphers
1030-1120	Cipher Instruction
1130-1220	Cipher Instruction - Security Lectures
1230-1330	Lunch
1330-1420	On-the-air operation
1430-1520	Blind broadcast copying
1530-1620	Code Copying
1630-1730	Operator's equipment maintenance - correction of common malfunctions in equipment - antennae principles and expedients - power source problems, etc.

Note: During advanced training, students will participate in day and night field problems, simulating as nearly as possible the field conditions anticipated in the actual operation.

IX. OPERATIONAL CHECKLIST

The Case Officer

A. Consult with a communications representative during the planning stages of an operation for purposes of mutual support and coordination. General factors Communications is interested in discussing are:

1. Availability of proposed trainee(s) for assessment purposes. Make available answers to points under Para III, if known.

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2. Approximate activation date for the proposed operation.
3. Basic mission of the operation.
4. Area of operation.
5. Expected traffic volumes on the W/T circuit(s).
6. Language to be used in ciphers. Who will prepare outgoing messages.
- Who will handle incoming messages.
7. How many contacts weekly envisaged.
8. Power sources in the area of operation.
9. Means of delivering equipment. Restrictions on size, weight, quantity.
- Interproofing required. Possibility of resupply.
10. When and how do you visualize W/T circuit being activated?
11. Training cover and security considerations.
12. Any factors involved which will affect training time availability. (e.g. medical care requirements, dental condition, extensive debriefings, report preparation which will detract from training availability).

B. Insure that communications clearances are secured in sufficient time to meet time deadlines proposed.

C. Keep Communications advised of any operational variations which affect communications training or Communications in general.

D. Consider the inclusion of alternate and backup communications channels of a non-electrical nature (e.g. SW, letter boxes, couriers, etc.)

The Radio Section

By the _____ day of
Intensive Training:

A. Prepare training signal plan w/crystals	20
B. Prepare operational signal plan(s) w/crystals	30
C. Procure, test and pack sample of operational equipment	60
D. Procure, test, and pack final operational equipment	75

The Training Section

A. Translation of Radio Operating Instructions	10
B. Translation of basic cipher documents	15
C. Translation of training signal plan	30
D. Translation of operational signal plan(s)	40
E. Translation of any special instructions	40
F. Translation of special cipher instructions	60
G. Preparation of operational ciphers	60
H. Radio Fingerprint trainee(s)	75
I. Delivery of all radio/cipher/other communications material to activation area	75

Communications Staff - General

- A. Assure that preliminary discussions involving planned communications training are timely.
- B. Assure that proper clearances are secured for communications training.
- C. Coordinate Communications' role in the operational support of individual project and/or program.

X. GENERAL COMMENTS

A. The most time consuming factor in W/T training is usually the memorization of the Morse Code and the attainment of the minimum speed of 10 words per minute. It behooves us all to insure that this minimum goal is attained at the earliest possible time by making use of supervised self-instruction preliminary to intensive training. Prompt and continued attention to this principle will repay us many times. This basic phase is also the most psychologically depressing period in communications training. Case officers and instructors alike should make extra efforts to "cheer on" the trainee during this phase of training.

B. A successful operation is a coordinated operation. KEEP COORDINATED.

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C. Instructions received from the Chief of Communications, Home Office, subsequent to the preparation of the preceding sections outlines in somewhat greater detail the practices in requesting clearances for training. These are:

1. Request for training of agents in communications subjects will be cabled by case officer concerned for action by Communications Division, Home Office, with info for Commo, Karlsruhe. Such requests will be submitted only after the basic operation in question has been approved by the Foreign Division concerned.
2. The above cabled requests will indicate the specific types of training desired; e.g. cryptographic, morse code, signal plans, equipment.
3. The specific requests above will be answered by Communications Division, Home Office, giving specific approval or disapproval by type of training. Disapproval of certain categories of, or all, training requested will be accompanied by reasons therefor.
4. At the time the case officer's request cable is received by Commo, Karlsruhe, a detailed crypto/technical cable will be transmitted to Communications Division, Home Office by Commo, Karlsruhe, in order that Home Office action on training requests will be expedited.

D. Attached hereto are copies of two standard communications report forms. The Report of Communications Assessment will be rendered following communications assessment. The Radio Training Report (in two pages) will be rendered following completion of each training period in the case of staybehind trainees, or monthly in the case of active trainees undergoing intensive training. A third report on cryptographic training will be rendered to Communications Division, Home Office, in cryptographic channels as directed.

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MILITARY COMMUNICATIONS ASSESSMENT

DATE: _____

NAME: _____

AGE: _____

LANGUAGES AND FLUENCY: _____

EDUCATION: _____

PREVIOUS COMMUNICATIONS TRAINING: _____

PREVIOUS COMMUNICATIONS EXPERIENCE: _____

PREVIOUS CIPHER EXPERIENCE: _____

GENERAL BACKGROUND IN RELATION TO COMMUNICATIONS TRAINING: _____

SCORE ATTAINED CODE APTITUDE TEST _____.

REMARKS: _____

ASSESSOR _____

RADIO TRAINING REPORT

DATE:

SIGNING OF REPORT:

TO:

NAME:

AGE:

NATIONALITY:

MARITAL STATUS:

WORKING EXPERIENCE:

PREVIOUS TRAINING THIS ORGANIZATION:

PREVIOUS TRAINING OFFICER:

INSTRUCTION GIVEN THIS PERIOD: BASIC INTERMEDIATE ADVANCED

INSTRUCTION GIVEN	SUBJECT	UNDERSTANDING/PROFICIENCY			
		POOR	FAIR	GOOD	EXCELLENT
	RECEIVING TECHNIQUE				
	SENDING TECHNIQUE				
	PRINTING				
	"ON" SIGNALS AND PROSIGNS				
	RADIO PROCEDURE				
	USE SIGNAL PLANS				
	EQUIPMENT FAMILIARIZATION				
	EQUIPMENT OPERATION				
	EQUIPMENT MAINTENANCE				
	TRAFFIC HANDLING				
	FIELD EXPEDIENTS				
	RADIO THEORY				

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FULL OR PART USED IN TRAINING:

TRAINING PROCEDURES EMPLOYED:

REDUCED DISTANCE NETS _____
ON-THE-AIR CONTACTS _____
FIELD EXERCISES _____

TYPE OF AIR CONTACTS WITH BASE:

TYPE OF SIGNAL EXCHANGED: SPLIT RECEIVED

ROUTINE SIGNAL PLAN NAME:

INDIVIDUAL PERFORMANCE:

POOR FAIR GOOD EXCELLENT

APTITUDE FOR TRAINING

INTEREST SHOWN

CONFIDENCE IN PERFORMANCE

SECURITY AWARENESS

CENTRAL PERFORMANCE RATING

FROM SPEED COMPLETION THIS DRILLING: RECEIVING _____ SENDING _____ WPM.

REMARKS:

INSTRUCTOR